PROCEEDINGS

OF THE

AMERICAN PHILOSOPHICAL SOCIETY,

HELD AT PHILADELPHIA, FOR PROMOTING USEFUL KNOWLEDGE.

VOL. XVIII. MARCH 15TH, 1880. No. 106.

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CELEBRATION

OF THE

HUNDREDTH ANNIVERSARY

OF THE

INCORPORATION.

AMERICAN PHILOSOPHICAL SOCIETY.

VOL. XVIII. . MARCH 15, 1880. No. 106.

Special Meeting at the St. George Hotel.

Present, 71 members.

President, FREDERICK FRALEY, in the Chair.

Vice-Presidents, Mr. Eli K. Price, Prof. E. O. Kendall, Dr. John L. LeConte.

Secretaries, Prof. P. E. Chase, Dr. Daniel G. Brinton and Prof. J. P. Lesley.

Curator, Mr. Henry Phillips, Jr.

Treasurer, Mr. J. Sergeant Price.

Councillors, Mr. Henry Winsor, Mr. William A. Ingham, Mr. Benjamin V. Marsh, Dr. George H. Horn, Prof. Robert E. Rogers, Mr. Richard Wood.

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Members :

Hon. Joseph Allison,
Dr. Robert H. Alison,
Prest. William H. Allen,
Dr. Harrison Allen,
Mr. James C. Booth,
Dr. T. Hewson Bache,
Mr. William Blasius,
Mr. J. Blodget Britton,
Prest. Thomas Chase,
Mr. E. B. Coxe,
Mr. B. B. Comegys,
Prest. Wm. C. Cattell,
Prof. E. D. Cope,
Mr. William M. Canby,
Prof. G. H. Cook,
Prof. T. M. Drown,
Prest. D. C. Gilman,
Prof. Wm. Henry Green,
Dr. Wm. H. Greene,
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Dr. F. V. Hayden,
Prof. S. S. Haldeman,
Dr. Wm. A. Hammond,
Prof. George A. Kõnig,
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Dr. R. J. Levis,
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Mr. M. H. Messchert,
Dr. S. Weir Mitchell,
Mr. S. H. Nichols,
Mr. Henry M. Phillips,
Mr. Titian R. Peale,
Prof. T. C. Porter,
Dr. Thomas B. Reed,
Mr. P. F. Rothermel,
Mr. William Sellers,
Dr. Albert H. Smith,
Prof. Charles W. Shields,
Mr. A. Loudon Snowden,
Mr. Henry Seybert,
Mr. Frank Thomson,
Mr. Jos. B. Townsend,
Prof. Theo. G. Wormley,
Mr. John P. Wetherill,
Mr. William S. Vaux,
Hon. John Welsh,
Mr. Joseph M. Wilson.

1. *Address by the President,*

FREDERICK FRALEY, LL.D.

"It is not facts which perplex us, but the opinions about those facts."—*Epictetus.*

In May, 1843, our Society celebrated the One Hundredth Anniversary of its foundation. The century that had thus encircled it was one of the most remarkable the world had witnessed.

Whether looked at from political or scientific points of view it was marked by most important changes, the fruits of which as now enjoyed have added greatly to the civilization, wealth and happiness of mankind.

The historian of the Society, in his address in 1843, gave a most eloquent and faithful account of the history of our institution, but he found his limits too narrow to portray all that he desired, and it was left to others in sessions that continued for several days to tell of the wonders of scientific discovery.

When my esteemed friend Dr. Robert M. Patterson closed his address he made a pointed reference to the incorporation of the Society, in March, 1780, and expressed the hope that when another celebration should be held, the Society could be found as honorable and as honored in the years to come as it has been in those which he commemorated. Little did I think then that I should stand in his place to-day and try to trace with no hand or voice like his the record that he left unfinished and the story of the years that have followed. I can scarcely realize that I am the only surviving member of the Committee of Arrangement for the Centennial of 1843, and that my venerable friend, Dr. Isaac Lea, is the only survivor of the Board of Officers and Council of that day.

The then roll of members is greatly diminished, but our ranks have been filled up with the names of men whose worth and whose works keep up our well-earned history.

It has been my good fortune to have had personal knowledge of all the Presidents of the Society, except the first three, and to have been knit in bonds of active friendship and almost constant intercourse while they lived, with Chapman, Patterson, Franklin Bache, Dallas Bache, Kane and Wood. Dr. Patterson spoke of Franklin, Rittenhouse, Jefferson, Wistar and Tilghman; and what histories were theirs.

Franklin, the philosopher, economist and statesman, the diplomatist, the noble and true courtier, the man of America, the useful citizen of Philadelphia, to whom we owe so much for the establishment of our institutions of learning and charity. We may thank Boston for having given him to us, but God planted him in his true field and he did great honor to the planting.

Rittenhouse, the astronomer and mechanician, self-cultured, like Franklin, mild, modest, benevolent, just the man to be loved for his virtues and to be honored for his great and perfect knowledge.

Jefferson, the statesman and philosopher, whose pen could write the strong words that came from heart and head to rouse a young people to the assertion of their rights, and afterwards to command and guide them in the path of wisdom for their preservation.

Wistar, the beloved physician, the gifted Anatomist and Surgeon, one of the worthiest of the worthies, who raised the Medical Department of the University of Pennsylvania to its great reputation, and withal, the

kindest and gentlest of men, opening weekly his hospitable house as a centre for the assembling of men of learning: whether in science, law or politics, philanthropy or general affairs. He died comparatively young and one of his successors made his fitting eulogium.

Robert Patterson, the fifth President and the father of Robert M. Patterson, was born in Ireland, in 1743, of humble but respectable parents. After a varied and somewhat trying youth, he emigrated to this country and attempted business as trader. This was not congenial or successful. The bent of his mind was for Mathematics and Natural Philosophy and he speedily turned his attention to teaching. He applied for and was elected to the office of Principal of an Academy at Wilmington, Delaware. It is recorded of him that his duties required the giving of instruction in the Latin language, of which he knew nothing, but he manfully went to work to study it and to keep ahead of his pupils, thereby managing to give satisfaction to his patrons. He was engaged in this work when the war for Independence broke out, and before and after school hours drilled several companies of his townsmen in military movements. The knowledge for this he had acquired as an enlisted soldier in Ireland, having been enticed into that sort of life by a promise on the part of the sergeant that he would have the chance of studying mathematics while in service.

He entered the army of the Revolution first as an assistant surgeon, for which he had qualified himself by a short study of medicine, and was afterwards appointed Brigade Major. On leaving the army he commenced farming, and being disheartened by the

loss of some sheep that had strayed away, while absent in search of them his wife accidentally found by an advertisement in a newspaper of Philadelphia, that a Professor of Mathematics was wanted in the College of that city. He proceeded with her advice to apply for the place, and after a courteous reception from Provost Ewing, he was appointed and continued in office for many years, holding in addition to his Professorship the office of Vice-Provost. He was one of the best mathematicians of his day, and his general knowledge of scientific and general subjects was large and usefully employed.

His residence in Philadelphia brought him immediately and closely in contact with the leading men of the day, and he soon became a member of our Society, contributing to its Transactions and filling the offices of Secretary and Vice-President. In 1805 he was appointed Director of the Mint of the United States, which office he held until within a few weeks of his death in 1824. He took a deep interest too in the progress of mechanical science, and became one of the original members of the Franklin Institute, and, I think, was Chairman of its Board of Managers when he died. His career was one of great honor and usefulness, and his obituary notice by Chief Justice Tilghman is full of interest. Tilghman, the great jurist to whom the law owes many of its noblest expositions, whose tender and affectionate spirit was like that of a woman, but whose love of justice was as inflexible and exact as if in him were enshrined the purest conceptions of the truly god-like duties he was called on officially to discharge.

These six were the heroes of our earlier history,

and we come now to the men of whom we can remember the goings out and comings in.

Duponceau, who presided at the Centennial of 1843, had come from France to be the private Secretary of Baron Steuben during the war of Independence, and afterwards was admitted to the bar. He was a scholar of considerable acquirements, of a philosophic mind, very patriotic in his impulses, and served the Society faithfully and acceptably for many years as President. He made a number of valuable contributions to the Transactions of the Society and was highly respected and justly esteemed by its members. With his death in 1844 the more modern history of the Society begins. Two gentlemen equally distinguished in their professions were voted for and the choice fell on Dr. Robert M. Patterson, but with that chivalrous feeling that distinguished him and in accordance with the preference he had expressed for his competitor, he declined to accept the office, and the presidency remained vacant for a year, both Chapman and Patterson serving as Vice-Presidents.

In 1846 there was no contest and Dr. Chapman was elected President. He was a doctor of medicine, skilled in the highest degree in his profession, a Professor in the Medical School of the University, with a large practice. He was one of the most brilliant men of his day, and his sententious lectures told for the advancement of the knowledge of his students, as the vast resources of his wit and humor, gave brilliancy and pleasure to his social life. For many years he filled a large space in society in Philadelphia, and was one of the most popular men of his time.

Dr. Robert M. Patterson, was our next President,

one of the most accomplished men I ever knew. In early life becoming Professor of Natural Philosophy and Chemistry in the University of Pennsylvania, in the Department of Arts he soon achieved a wide reputation for his learning, and for his skill as a teacher. He was a most eloquent man, of captivating manners, and so genial and attractive that the old as well as the young sought his society. He was for a time a Professor in the University of Virginia, and for many years was the Director of the Mint of the United States. He was one of the original members of the Franklin Institute, and its first Professor of Mechanics and Natural Philosophy. To me he was one of the first links in a chain of friends, which being welded in 1825, held together for nearly twenty years unbroken, and then in death, link by link, it gradually fell asunder. With him began the list of Presidents that formed the body of my own personal and very dear friends, and the years that I spent with them are filled with the choicest of my recollections.

For a while the Society had a rule that the Presidential term should be for two years, and hence it was that dating from the time of Dr. Chapman to that of Dr. Wood, we had five Presidents.

Franklin Bache was the next President. He was a great-grandson of Dr. Benjamin Franklin, and in many traits of character resembled him. He had a bland serenity of manner, a great deal of quiet humor, a very sagacious mind, and habits of careful and persevering industry. He was for a long time one of the Secretaries of the Society, and the neatness and completeness of his records, and their handwriting greatly identify him with his ancestor.

He was a doctor of medicine with considerable practice, but soon became a Professor in his favorite Department of Chemistry. He succeeded Dr. Wood as Professor of that subject in the College of Pharmacy, and held the same Chair in the Franklin Institute. He was subsequently chosen Professor of Chemistry in the Jefferson Medical College, and held that office until the day of his death. He was one of the authors of the Dispensatory of the United States, and wrote and published a good deal on the subjects to which he devoted his attention. He was a liberal donor to the Society, and for many years one of its most useful and influential members. He was a man of very noble personal presence, and courteous and kind to his young associates.

Next in the order of succession comes Alexander Dallas Bache, another great-grandson of our illustrious Founder. As Franklin Bache resembled Franklin in many traits of character, Dallas Bache was regarded by those who knew him intimately as being almost the "tout ensemble" of the venerated sage and philosopher. Like Franklin, he was not college bred, but after an early training in our best private schools, he was appointed a cadet, and finished his preparatory education at the West Point Military Academy. I say *preparatory*, for he never ceased to be a student or to learn. He graduated from that institution with great honor, and was in course appointed a Lieutenant of the United States Artillery, and placed in charge of the construction of fortifications at Newport, Rhode Island. But he was an innate scientist, and was soon called to act in that sphere, being chosen Professor of Chemistry and Natural Philosophy in the Uni-

versity of Pennsylvania. Here he expanded into his true proportions, and took his rank in the highest social and professional circles. He became an active member of the Franklin Institute, and with the coterie of devoted men that then influenced its counsels and organized its labors, not only laid the foundations of its great usefulness, but raised it to that pre-eminence as a widely useful institution, which it has so long enjoyed, and which it so successfully maintains.

When the munificent bequest of Stephen Girard was given to the City of Philadelphia, for the establishment of the Girard College, and the plans for organizing that institution were to be prepared, the Directors elected Professor Bache, President of the College. He resigned his chair in the University and accepted the appointment. He immediately proceeded to Europe to visit and study the educational institutions of all kinds then in operation there, and his Report on Education in Europe, made to the Directors on his return, contains a complete account of such institutions, and was the most full exhibition of the subjects of which it treated that had up to that time been published. When he returned the College buildings had not been finished, and while awaiting their completion he prepared the plans for and organized the Philadelphia High School, serving some time as its Principal, and bringing to his aid the very men who could enter fully into his plans and aid him in an enterprise which had so much promise of usefulness. He was an admirable organizer and the great success which has attended the school is due in large measure to the perfection with which he started it. Delays

having attended the completion of the Girard College buildings and being unwilling to hold nominal offices, he again accepted his old chair in the University which had become vacant by the resignation of Professor Roswell Park. He was heartily welcomed back by Professors and students, for there was no man who possessed a greater faculty of reading human character and striking the chords that could bind every one to him and, as it were, making them a part of his own being. He was not allowed to remain long in his old and much loved seat. By the death of Mr. Hassler, the office of Chief of the Coast Survey of the United States became vacant and the unanimous voice of the scientific men of the day designated him for the place. The Government wisely yielded to this call, and the wisdom of the appointment was demonstrated by the complete success which attended all the subsequent prosecution of the work.

He put new life into all its departments, he organized anew the details of the field and office work, he caused more accurate and delicate instruments to be made and the measurements and observations to be recorded, verified and tabulated in the most complete forms. Here, as in every thing else, confided to him, he always found the right man for the right place, and for years the work went on, full of honor for him and for his associates, and alike honorable and useful to his country. It still bears the impress of his genius and skill, and is justly regarded as one of the great marks of scientific progress of the century.

His services were called for in many other matters of public concern, and were always faithfully and efficiently rendered. He was one of the founders of

the National Academy of Science, and by his will gave it a bequest of a considerable sum for its endowment. I have dwelt on his noble character and great merits with peculiar pleasure, for he was my schoolmate in youth and one of my dearest friends for half a century.

Our next President was John K. Kane, born and bred in Philadelphia, and admitted to practice in its courts at an early age. He was a fine scholar and an active citizen, participating in many ways in measures of public interest. He took an active part in the proceedings of the Society and was highly esteemed in its councils.

After practicing his profession for many years, he was appointed Judge of the District Court of the United States, for the Eastern District of Pennsylvania, and died in office as Judge and President.

All the Presidents from Duponceau, to and including Judge Kane, had held office as Secretaries and Vice-Presidents, and were thereby characterized by full knowledge of the working of the Society.

Dr. George B. Wood was elected President in January, 1859, and by re-elections held office until his death in 1879. He was born in New Jersey, and received both his literary and professional education in the University of Pennsylvania. He was by profession a doctor of medicine, and was as a general practitioner one of the most skillful and successful of his day. He soon became distinguished too as a teacher, and was successively elected Professor of Chemistry in the College of Pharmacy, Professor of Materia Medica in the University of Pennsylvania, and finally Professor of the Theory and Practice of Medicine in that institution. He was a man of peculiarly grave and

imposing presence, and yet had so much of kindly human sympathy that he could readily be kindled into great geniality, and give out very bright flashes of hearty humor.

He was quite a voluminous writer, and one of the great standard works of his labors is the United States Dispensatory, which he prepared in conjunction with Dr. Franklin Bache as before stated. His special Text Books are held in high esteem by the profession. He was quite an eloquent man, and participated in public affairs to a considerable extent. He was a liberal giver in all philanthropic movements, and took a deep interest in the prosperity of the Society, and besides special donations gave it by his will a legacy of $20,000 for aiding in the erection of a fireproof building for the preservation of its valuable library and other property.

I have thus briefly sketched the personal history of our Presidents to the date of our present Centennial Celebration.

Would that I had time and space to make a like record for our members. But as that is impossible, I can only invite your attention to the names which our roll of past and present associates will give you of those who have been deemed worthy of our fellowship. Both at home and abroad men have been selected for this honor who had either already won or were winning the highest distinctions in Politics, Science, Literature, and in the liberal and useful Arts, and also men of influence in the general walks of life and in what are called "affairs."

It has thus come to pass that the Society may be considered as presenting the most perfect type of a

body devoted to the "promotion of useful knowledge."

It has not forgotten either to recognize that women as well as men are in the circle of those to whom the world is indebted for its progress, and that same roll contains the names of women of eminent and varied knowledge deemed worthy of such honorable recognition.

Let me repeat here the counsel given in 1843, by the Committee of Arrangements and specially enforced by a resolution then offered by our late associate, Joseph Henry, that it should be a matter of special concern that the officers and members should keep constantly in mind that it is an imperative duty to call every one to membership who by worth, virtue and special fitness is calculated to benefit the world by what he can give to it out of the gifts bestowed on him.

But I come now to a field on which I really fear to tread. My predecessor in Centennial duty shrank from it on account of its vast extent; and the years that have elapsed since he spoke have added immensely to any adequate conception of what has been wrought in the civilized world from 1743 to 1880. I shall, therefore, as he did, leave to others, to make special references to the various subjects into which the history divides itself and present only a summary of what has marked our human progress.

As on good government all the true advancement of society mainly rests, we may mark what has been accomplished for the settlement and amendment of political institutions. The principles introduced into the government of Great Britain in 1688, had to be cultivated

and sustained by many grave struggles and partial civil wars, before the complete settlement of the institutions of that country, in nearly their present form was finally accomplished, by the full acknowledgment of the House of Hanover as the source of sovereignty. That government is the only one in Europe that has not been changed by violent revolution, and its permanence under wise provisions for general amendment, seems now to be perfectly secured. Our own Country in 1776, then thirteen Colonies, literally struggling under many political burthens and disadvantages, boldly struck for its independence and freedom, and after a seven years' struggle, conquered the full acknowledgment of them, from the British King. They soon found that the bands of a Confederacy were too weak and loose for a Nation, and in a peaceful examination of respective rights, powers and duties, the sovereign States yielded enough of sovereignty to the people to establish a glorious and permanent Union, to be a model for the world, of the advantages of self-government, and of adaptation to meet the wants of a constantly growing Empire. The thirteen feeble Colonies of 1776, have grown to be thirty-eight powerful States. The three millions of people that won independence, are now swelled to more than forty millions, and our Country, in Arts, Science, Manufactures, Literature and Arms, is acknowledged as a great power in moving and molding the world.

France copying from the United States has within the century tried four times to remodel her government in the interest of true liberty, and has three times relapsed into the bonds of despotism, but we may hope that the fourth effort will be attended with happier results.

The struggles for freedom have indeed pervaded the whole continent of Europe with more or less effect in securing popular rights and modifying ancient institutions.

War has had a great hand in accomplishing all this, and the needs of war have stimulated human industry and ingenuity.

Nearly the whole of the continent of South America has been freed from monarchical rule, and the whole of the two Americas now seem destined to be republics on our model.

The art of war has been wonderfully improved, and as its instruments have become more powerful and complete its carnage and misery have been increased. But even in it we find compensations by a better recognition of the political rights of States, and also by a better regard for the laws of humanity and private rights.

If the political interests of mankind have been improved by these great changes, how infinite have been the advantages derived from the mechanical inventions of the last hundred years.

The steam engine, the great motor for nearly all of these as they now exist, has emerged, as it were, from an embryo, to almost a living being, weaving the gossamer threads of animal and vegetable life, with the same ease that it moves the mighty masses of ocean steamers, or wheels the countless trains of cars over the iron pathways of every continent.

Machinery for almost every mechanical art has become nearly automatic, and whether it moves the minutest drill, the loom, the printing press or the wonderful ponderous or delicate hammer, it is everywhere

in our most active life, the willing and obedient servant of men.

Railways were in their infancy, when the celebration of 1843 took place, now they count by hundreds of thousands of miles, they are even threading the routes of ancient commerce. As they increase and multiply, so the world is knit more closely and happily together, and human brotherhood becomes more intimate and perfect. Has science stood still during all these years?

The answer comes back to us through the telegraph, the telephone and the myriads of inventions that depend on Magnetism and Electricity. It speaks also in the wonders of Geology, Biology, Chemistry, Astronomy, Physics, Metaphysics, Historical research, and in Medicine and Surgery.

But would these results be ours if we had not had the use of types and printing? What revolutions they have wrought in our speech and thoughts. If the world's knowledge had depended on slow copyists, multitudes would never have had one bright intellectual ray.

Our founder, Franklin, was a printer, and perhaps the most intelligent and skillful of his day. Look at his old press as it stands now in one of our museums, and compare it with one of those that to-day strike off many thousands of copies in an hour, and you can form some conception of what types and printing are doing for the promotion of science and useful knowledge. When the world was brought to this city in 1876, to interchange the exhibition of its natural and artificial productions, we had an instructive picture of what the present civilized world is. History enables us to penetrate in some degree the obscurity and imperfection of ancient times, but we could have no other

feeling than that of real exultation in beholding spread before us in our Great Centennial Exhibition our present world in all its strength and grand proportions and its ability to realize for mankind what the ancient poet wished for his people:

"O fortunatos nimium sua si bona norint."

I must forbear from the further attempt to give the marvels of what 1743 to 1880 reveal. Many of them take date within my own memory, and I am truly grateful that I have witnessed the revelation of such gifts to men.

We may be proud to feel that our Society has had a full share in all this wonderful work.

Among our members have been found the Statesmen, Philosophers, Mechanicians, Manufacturers, Doctors, Lawyers, Judges and Merchants who both here and elsewhere have been the workers in the fields. We have in our Transactions and Proceedings essayed to give the world the benefit of their discoveries and investigations, and in return they have reflected honor on us.

I must now leave to my associates to tell us of the march of modern science in all its forms, and to perfect the imperfect sketch of it which I have given.

The Society published the first volume of its Transactions in 1773, and they now number twenty-one volumes, with an additional one, ready for publication. These volumes contain the more elaborate and important subjects that have been communicated and are to a considerable extent the important records of scientific progress.

The publication of the Proceedings was begun in 1838, and they have now reached 104 parts.

Practically they for many things supersede the Transactions, being less formal in their character, and issued in rapid succession, give the current contributions of our members for the advancement of science and the progress of original research.

Our commemoration would not be complete without some reference to the Society as a corporate body. It was incorporated by the General Assembly of Pennsylvania, March 15, 1780. The preamble of the act declares the objects for which it is created with considerable detail and then come the enacting clauses which gave its name and powers.

It is remarkable how fully and clearly the powers are expressed, and the only amendments or additions that have been made to them since are those which enable us to sell and rent our real estate. It contains one remarkable clause which shows the clear and catholic views that our founders held as to the neutrality of science, for it provides that all correspondence or communications to or from the Society shall have free transmissions, notwithstanding the prevalence of war.

In 1785, the State granted a lot of ground to the Society, as a site for the erection of a hall. This lot forms a portion of Independence Square, and its dimensions are 70 by 50 feet. The building was begun in 1785, and it was occupied but not completely finished in 1789. The old minutes to which I refer any curious inquirer,* contain many amusing as well

* The plan for incorporating the Society was ordered at a meeting held (as usual then) in the University, Dec. 17, 1779. Dr. Smith, Dr. Duffield and Mr. Biddle being constituted a committee.

Feb. 17, 1780, inquiry began to be made for some lot of ground on which the Society might erect a building for itself.

April, 11, donations were ordered to be solicited.

as instructive memoranda of the difficulties of getting through with such an important work. Such difficulties are not unknown even to the present generation. But at last they were happily surmounted, and with but a slight change in the basement story, the building stands to-day in the same shape as originally constructed. By several additional enactments the legislature authorized the Society to rent such parts of the Hall as were not needed for its own purposes, and under these we have always had a considerable income from rents. The city of Philadelphia is now the owner of the whole of Independence Square, except the lot on which stands our Hall. They purchased the Square from the State in 1814, and out of the sale, our lot was reserved, and a prohibition made of the erection of any other buildings on the Square, than those which were then on it. Although this restriction was subsequently repealed, the historical associations of the Square are still so strong, that the power to build has been only once exercised by placing a Court House on the Sixth Street

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Proposals were made to the Library Company to unite in the purchase of Carpenter's Hall.

Resolved, that for the present, the Society's meetings should be held in Carpenter's Hall, to which the Society's effects were soon transferred.

Then follow many minutes of transactions respecting a Silk Society and Factory, an Act of Legislature vesting the Silk Society stock and machinery in the Philosophical Society, and much trouble with the trustees or directors of the Silk Society.

March 6, 1783, Rittenhouse moved the transfer of the Library and Cabinet to some member's house, which in time resulted in his being virtual librarian and curator, and finally president of the Society.

April 10, 1783, enquiries were made of the University at what rent the Philosophical Society might use its house in Fifth Street.

The Society owned some "house in the State House yard," and a committee was empowered to sell it.

In July an effort was made to purchase a 40′ by 48′ lot in Fifth Street.

In September Mr. Willing's lot in Third Street was looked at.

In November a lot belonging to Mr. Powell was examined.

front. As early as 1835, the city desired to purchase the Hall, and a few years afterwards conditional arrangements were made for such a purpose but they were verbal and informal, although intended on both sides to be carried out in good faith.

There was at that time a large building known as the Chinese Museum, situated on Ninth Street, South of Chestnut, which contained the large and valuable collections of the Philadelphia Museum, originally founded by C. Wilson Peale.

An arrangement was made, by which the Society should purchase this building, and lease part of it to the Museum Company, and use the remainder for its own purposes and benefit. It was supposed that what the City would pay for the old Hall, would enable the Society to buy and substantially pay for the Museum property. The Society made the purchase, and used all its funds in making the required payments.

These funds it was expected would be replaced by the money to be paid by the city for the old hall. The price of the hall was to be fixed by referees, of

Later in that month the committee reported that they could get Mr. Jno. Dunlap's lot in Fifth Street for $1000.

In December Mr. Hopkinson offered his S. E. cor. Seventh and Arch Street lot, "near" the Observatory, 40′ by 100′, for $1000. In fact this (?) lot "next" the Observatory, enlarged to 40′ by 306′, was, in the next February, purchased of Mr. Hopkinson for £600, half down, half on mortgage.

January 16, 1784, Mr. Hopkinson inaugurated a building excitement in the Society, and, February 6th, the Society resolved that measures be immediately taken for erecting a suitable building. Subscriptions were ordered; an application to the Legislature for aid; and, as soon as £1000 should be subscribed, a committee to plan and superintend the edifice.

The Legislature responded to the call, and, March 5th, the Treasurer of the Society was ordered to draw on the Treasurer of the State.

Sam. Vaughan, Mr. Rittenhouse and Mr. Hopkinson became a committee.

At the next meeting the committee reported a petition of the Philosophical Society and Library Company conjointly to the Legislature, for two lots of ground, one on each side of the State House yard.

which each party was to choose two, and in case they could not agree a fifth referee was to be chosen by the four referees and his concurrence in an award by any two and himself made the award binding and conclusive on both parties. It so happened that when the four referees met three would not concur in any award. The fifth man was chosen and he would not agree with any two of the other referees and so the project of a sale fell through.

While these negotiations were in progress the memorable financial troubles of 1837–1842, were in full operation, the city declined to carry out the conditional bargain that had been made and the Society was plunged into the depths of financial trouble, which for a long season threatened bankruptcy and even ruin. The sequel of this melancholy story was that the Museum building was sold under a paramount mortgage of comparatively small amount against which it was supposed the Society was protected by a valuable lot on Chestnut street, adjoining the Museum prop-

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In June a botanical garden was started on the Arch Street lot, which was subsequently rented to Mr. Rittenhouse, and finally, after some years, sold.

In December Mr. Vaughan reported that the Library Company were dissatisfied, and that he had presented to the Legislature merely the petition of the Philosophical Society.

The petition was granted, and the lot on Fifth Street obtained; for, in

April, 1785, it was again resolved to open subscriptions for erecting a building on the newly acquired ground; and in

June, Mr. Vaughan presented the plan of a house, substantially such as was built; except that the north half was to be divided into two rooms, instead of the south; and that vaults beneath the cellars were discarded as too costly.

November came, and Mr. Vaughan asked authority to "shoar" the cellar walls against the frost, at a cost of £3 16s. 6d.

1786. The following November, Mr. Vaughan's committee had expended £365 10s. 4d., in building, and asked authority to protect it against the winter, and to put an "area" around it, at a cost of £2 5s.

1787. In May a subscription of £400 for carrying on the building was

erty, which had to be sold first, and also by collateral security in other forms. But all these protections failed us in the day of fiery trial, and even our library and collections were at one time levied on by the Sheriff. It is to this peculiar crisis in our history that Dr. Patterson, so feelingly refers in his address of 1843, with hope but yet with fear. But the good old ship was still manned by a gallant crew, although somewhat cast down they were not dismayed.

They went to work manfully, gathered their resources together, paid their debts, and, as it were, took a new and more vigorous start in corporate life, and to-day the Society has a fund of nearly $60,000, the income from which in addition to its rents enabling it to defray all proper expenses and make liberal appropriations for its publications.

It is a source of unalloyed pleasure to me to have participated in this successful restoration of our affairs, and that I am able to answer to 1843: We have overcome and prosper.

Before I close I must refer to a subject in which my

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opened by the Society. But it was hard work, getting money. Finally, in November, Franklin (who was president of the Society until his death, in April, 1790) came to its relief and lent it £500, to finish the building. The Street Commissioners objected to the height of the front steps, and they were afterwards transferred indoors. Plans for letting rooms to the University, to the College of Surgeons, to the Freemasons, and to Mr. John Vaughan were formed, and in some cases subsequently carried out; the Society retaining for its own use only the south-west room, and the College of Surgeons taking the south-east. But it was not until the following summer—

Aug. 21, 1789, that a resolution appears on the minutes that, when Franklin's health would permit of his leaving his house, the Society should meet, not there, but in their own "Philosophical Hall."

No trace of a corner-stone laying ceremony can be discovered in the minutes.

The accommodations must have been poor, for two years afterwards—

March 4, 1791, it was resolved, that the south-west room should be *finished in a neat manner, as soon as contributions could be raised by the building committee.*

lamented predecessor, Dr. Wood, took a very deep interest. It is well known that our Hall is not fire-proof, and our valuable library and other property is constantly exposed to great peril. At his request in 1866, a Building Fund was started, to which he liberally contributed, and the increase of which he watched with great care. It did not reach during his life to a sufficient sum to procure a fire-proof edifice. By his will he gave a legacy of $20,000 to aid the fund.

The object that he had at heart is not yet accomplished. Let us follow his good example, and make a new Hall, such as he desired, the enduring Monument of this celebration.

What has been the influence of our example in the United States? We are the oldest scientific Society of the New World, but our correspondence with kindred institutions in our own country shows to what an extent science is now cultivated among us. Some of them are beginning to hold their centennial celebrations, and others their semi-centennials. Our sister of Boston, the American Academy of Arts and Sciences, invites us to its Centennial in May next by a delegation. This invitation we have cordially accepted, and the reunion of Philadelphia and Boston will kindle glorious recollections of our Revolutionary history.

We may truly rejoice over the triumphs of the century that closes with this day.

The civilized world is blessed with universal Peace, Science and the Arts are moving irresistibly onward, Commerce spreads her sails in every sea and her cars on every land, the art of Government is undergoing manifold changes full of importance to the future of the human race, and that Charity which is the greatest

of all graces is doing its perfect work. May the next Centennial celebration of the Society have as much to glory in as we are enabled to record of the one just terminated, and may 1943 and 1980 find our successors still in the field labouring for the Promotion of Useful Knowledge.

2. *The Early Botanists of the Society,*

Prof. ASA GRAY, Cambridge, Mass.

"E'en when the hoary head is hid in snow,
The life is in the leaf."—*Dryden.*

Prof. Gray being unable to attend the dinner and respond to the above toast, sent the following letter to the Committee which was read by Mr. Price:

CAMBRIDGE, MASS., March 10th, 1880.

TO THE COMMITTEE OF ARRANGEMENTS OF THE AMERICAN PHILOSOPHICAL SOCIETY:

Dear Sirs:—I am gratified and tempted by your kind invitation to the dinner of the American Philosophical Society, in commemoration of the one hundredth anniversary of its corporate existence. I knew that your Society was still more venerable, but I did not know that so much of its vigorous youth was anterior to the charter of incorporation.

It is interesting to me that your anniversary celebration occurs at this time, for it happens that the eldest sister of your Society, the American Academy of Arts and Sciences, is preparing to celebrate the one hundredth anniversary of its foundation a few weeks later, and on the very day of your foundation, viz. May 25th. As one of the elder of the living Fellows and a past President of this Academy, I should have been glad to appear before you as a representative of

the sister institution, to bring you its felicitations and at the same time to solicit your interest in our approaching commemoration. I know that it is intended to invite the American Philosophical Society to send us a delegation. But I find myself unable to leave home at present, and so shall have to forego this pleasure.

If I could have been present it would have been fitting and pleasing to me to address a few words to the Philosophical Society in commemoration of the distinguished Botanists it has nurtured or fostered. A list which begins with the name of John Bartram, the earliest indigenous botanist of our country, and includes the names of Barton, Mühlenburg, Collins, Schweinitz and Nuttall, ought to suggest and inspire some remarks which would not be inappropriate or uninteresting upon the occasion: although no doubt others will better fill the place and grace the occasion in which I shall not be able to bear a part.

With many thanks for your kind invitation and with my best wishes for the perpetual prosperity of the American Philosophical Society, I remain, yours very truly,

ASA GRAY.

3. *The alliance of Universities and the learned Societies,*

Prest. D. C. GILMAN, Johns Hopkins University,
Baltimore, Md.

"Die Weltgeschichte sucht aus sproedem Stoffen.
Ein reines Bild der Menschheit zu gestalten."—*Hebbel.*

In response, President Gilman said:

MR. PRESIDENT AND GENTLEMEN OF THE SOCIETY:

As a representative of the youngest of American universities, I am happy to greet the oldest of American acad-

emies, and to congratulate the members of this association upon the success which has followed its operations from the colonial days until now. I congratulate you on beginning right and on keeping right through a century of incorporated life, and on the prospect of a good continuance through years to come. As the eldest in a family is looked up to as a leader, so the eldest in the academic sisterhood is watched and followed by a long line of younger kin. Your methods of work, your modes of selecting associates, your philosophical discussions, and above all your publications of important contributions to human knowledge, are scrutinized throughout the land. Your progress has been the progress of science; in your success the country shares; in your centennial the academies and universities of the nation rejoice, and to your future they look forward with bright anticipations.

The sentiment to which you have asked a response suggests the reflection that in this wonderful epoch of intellectual activity, when light beams from such unexpected sources, on so many crypts, dispelling the shadows and ghosts with which they had been occupied, Universities and Academies stand like priests at the altar of truth, keeping bright the coals from which the torches of research are lighted. Their objects are the same; perhaps indeed there is a correlation of forces, and university heat becomes academic work. This at least is certain, that they are the most potent agencies which our civilization possesses for the discovery of truth. While it is important that they should be co-operative, it is also important that their methods should be individual, not identical, or in other words that their distinctive functions should not be confounded. I take it that the prime purpose of the uni-

versity is education, its secondary object is research; while the converse is true of the academy, which should always make its major task investigation, and its minor instruction. The best university will include among its professors those who can advance the sciences to which they are devoted, and among the associates of an academy there will always be those who are capable and ready to diffuse among men the knowledge discovered. The university will develop the talents of youth, the academy will task the powers of full grown men. Universities plant seed; academies reap fruit.

I do not indulge in these antitheses for the sake of rhetorical amplitude; but because, in response to the sentiment which has been proposed, it seemed to me well to emphasize at once the unity of purpose and the diversity of method which are characteristic of these complex institutions, and the need there is of giving both full scope.

There are always strong men in a community to whom universities do not offer a career. Leibnitz, at the beginning of the Royal Academy of Berlin, and Humboldt in its later days, are examples of scholars who found in learned societies and not in universities, the spheres of their activity. Newton on the other hand was efficient both in the University of Cambridge and in the Royal Society of London; and in our own day Sylvester has been equally active as a university professor and as a contributor to academic deliberations and memoirs. Two of our countrymen, as the biographer of one has shown us,* both named Benjamin, both born in Massachusetts, both devoted to experimental physics, both resident in foreign lands,—Benjamin Franklin, one of the founders of this Society, and Benjamin Thompson, Count Rumford,

* Rev. G. E. Ellis, D.D., in his Life of Rumford.

founder of the Royal Institution in London,—were deprived in youth of the advantages of university and collegiate training; but both of them enjoyed within the fellowship of learned societies intellectual excitement and instruction, and both have helped to perpetuate to our day the good influences in which they participated.

The mention of Rumford's name is suggestive of an important investigation recently completed, which beautifully illustrates the joint operations of an academy and a university. Your younger sister, the American Academy in Boston, holds a fund which was given by Rumford for the encouragement of researches in respect to light and heat. It has given the Rumford medal, first to Dr. Robert Hare, a distinguished member of this Society, and then to Ericsson, Treadwell, Clark, Corliss and Draper. Of late years it has bought instruments for the promotion of physical investigations.

Three or four years ago a new university originated in Baltimore, and one of the first men of science called into its service was a young physicist of Troy, whose studies in electricity, hardly noticed in this country, had attracted the commendation of Clerk Maxwell, in the University of Cambridge. This Hopkins professor suggested to one of the Rumford trustees a method which might be employed for the more accurate determination of the mechanical equivalent of heat. The Academy listened to the proposal and agreed to furnish from the Rumford fund a part of the cost of the necessary apparatus; the University encouraged its professor to undertake and prosecute the inquiry and bore a part of the cost of the instruments. The investigation has been concluded, and its results have been published in a memoir of nearly two hundred pages by the Academy in Boston. Its conclusions are of fundamental importance;

but this is not the place to rehearse them, were I qualified to do so. I simply call attention to them as a good example of scientific co-operation, and especially as an illustration of the mode by which an academy endowed by the courtier Rumford, more than eighty years ago, and a university, recently founded by Hopkins, of the Society of Friends, are able to unite in the discovery and publication of scientific truth.

Before I close, Mr. President, may I be allowed to add one more remark? There are three neighboring cities which it seems to me have not yet done what they might for the intellectual advancement of this country. I refer to Baltimore, New York, and, you will pardon me for adding, Philadelphia. They have good institutions, they have learned men, they have great wealth; but they need stronger and closer combinations than now exist,—better organization for the advancement of learning. We may hope that with recurring prosperity, increasing vigor will be shown in their academies and universities.

In such activities there may be emulation, but there should be no rivalry; for, as the forts which guard the Chesapeake, the Delaware, and the Bay of New York support one another, so these three great cities may strengthen and encourage each other by the firm establishment of institutions for the protection and defense of society against ignorance, bigotry and pretense. Sure that the central city of the trio, the intellectual and financial center of the Keystone State, will do its part,—I beg leave, in conclusion, to offer this sentiment:

The American Philosophical Society and the University of Pennsylvania; may they shine as a *stella duplex* through centuries to come.

4. *Our friends who have passed away,*

Dr. W. A. HAMMOND, New York City.

"Plena fuit vobis omni concordia vita;
Et stetit ad finem longa tenaxque fides."

In reply, Surgeon-General Hammond said:

Before coming on here I was selected by the members of a Scotch society to attend a dinner which was to be given upon the anniversary of the birth or death of Robert Burns, and I was requested to post myself thoroughly upon Scotch medical men; that I would be required to respond to the toast, "The Medical Men of Scotland." I did so. To my great disgust I found I had made a mistake in the dinner; that instead of coming off on Tuesday, it came off on Wednesday; so that I come here rather filled with ideas concerning Scotch doctors. Mr. Price said that I would not be expected to make a mournful speech; that I could respond in the best vein possible. I think we will all agree that we have much more regard for the man who makes us laugh than the man who makes us cry, and crying would be greatly out of place this evening.

For the history of the dead of the American Philosophical Society, you have only to think for one moment of those remarkable men who have passed away, who have given their lives to science, and were at the same time members of this Society. Of them I have nothing to say, because they are familiar to you. But there are three or four men with whom I was well acquainted, and first in regard to my old friend, Charles B. Trego. I knew him thirty or forty years ago. My very first idea of any scientific impetus was received from that man. I saw him frequently, and he treated me as a father would treat a son, and the amount of

knowledge which I acquired from him at that time was far more than I have got from any other one person. Strange as it may seem in these days, Mr. Trego was elected to the Legislature. They do not send such men to the Legislature now; and if they did, they would probably be entirely out of place. Mr. Trego and I were very frequently together, and I will go on loving him as I love my own father. He was not what could be called a jovial man. I recollect that I went to the Capitol at Harrisburg one day to hear the debates, and some western member was speaking without much reference to the matter before the House. Mr. Trego saw him and came over to me and said, "Do you know what that man is talking about?" I said, "I have not the slightest idea." "Well," he said, "neither have I; he is letting the dark out on it."

Then about Samuel Jackson and Joe Carson. What a remarkable man Jackson was. Paralyzed in both of his legs, yet I never saw anything but a smile upon his face. Carson was more grave, more dryly humorous. He once gave me a conundrum which was unlike anything I had ever heard before. I was then an assistant surgeon of the army, and rather more puffed up than I am now. Carson said to me, "I have often noticed that assistant surgeons of the army are the knowingest military men in it; I have been thinking about a conundrum. As a military man, can you tell me the difference between a piece of roast beef and a fortification?" On my replying in the negative, "Well," said he, "I will tell you. A fortification is a work placed usually for purposes of defence at the entrance of a harbor, armed with heavy guns, sometimes built of stone, and sometimes built of earth; usually garrisoned by troops, and these troops have various munitions of war, which are furnished

them for the use of the ordnance. Now, on the contrary, a piece of roast beef is the cooked flesh of the ox, endowed with highly nutritious qualities, usually served upon the table and people eat it, and hereafter when any person asks you the difference between a piece of roast beef and a fortification, you will probably be able to tell it."

There is my old friend, Dr. Wood. Although dignified to an extreme degree, he was the personation of kindness. As a scholar and man of letters, I suppose we shall scarcely look upon his like again. There is one point in regard to him which is worth mentioning here and with which some who hear me are doubtless acquainted. He made a tour through Europe, and after completing it, he sold his carriage and horses and invested the proceeds in fine Burgundy, Chambertin I think, and I have had intense satisfaction in drinking a good deal of that Burgundy. I think the most pleasant recollections I have of the doctor are connected with that Burgundy.

It would be very easy to say more or less about the worthy dead, and although what I have said to you has been rather in a jovial strain, yet there is enough for serious thought. The history of science in this country could be told in the biographies of these men. I now propose, "The memory of those who have gone from among us."

5. *The study of Languages,*

Prest. Wm. C. Cattell, Lafayette College, Easton, Pa.

"Quæ philosophia fuit, facta philologia est."—*Seneca, Ep.* 108.

President Cattell, in reply, said:

Mr. President and Gentlemen:—It is well known that the Founder and first President of the American Philo-

sophical Society was in his way somewhat of a Philologist, though it may be taken for granted that he never abandoned the pursuits of Philosophy for those of Philology, as Seneca in the quotation upon the programme seems to assert was done by the wise men of his day. But philology in this age means something very different from what it meant when Seneca wrote these words, or when Franklin presided over the deliberations of this Society, whose Centennial we celebrate to-night. Dr. Murray, the President of the Philological Society of England, says, in a late number of the *Independent*, that as recently as twenty-five years ago, "English Philology was in its pre-scientific babyhood;" so that Franklin, though he was no mean Latin scholar and knew several modern languages, could not have played what would now be regarded a leading rôle as a Philologist. Yet the illustrious sage brought his philosophy to bear upon the English language at a point where many of the great Philologists are now concentrating their strength,. namely, the reform in spelling. Not only did this practical, honest, economical printer revolt at the unnecessary expenditure of time and labor in setting up the silent letters and of paper and ink in printing them, but his philosophic soul was vexed at the wild and reckless spelling that obeyed no law and could be reduced to no order. He published a dissertation upon the subject, based upon these three eminently philosophical principles, (1) that there should be no letter that is not sounded, (2) that every letter should be confined to one sound, and, (3) that there should be no distinct sounds in the language without letters to express them. To carry out his reform he invented a new alphabet, contemptuously dismissing six of the present letters as useless and introducing six new characters to ex-

press the sounds not already provided for. In his letter to Miss Stevenson, 1768, written in the reformed spelling and with the new characters, he disposes in his plain common sense way of the objections urged against the new departure, including the very ones most frequently advanced now. But the great man, who handled the lightning with such success, failed hopelessly in his encounter with the English spelling; and in his letter to Mrs. Mecum, 1786, he sorrowfully admits that "what is still called the *bad* spelling in English is really the *best*, as generally conforming to the sound of the letters and of the words;" he also quotes, with undisguised admiration, the conundrum of Mrs. Brown's housemaid, "if *yf* don't spell *wife*, what does it spell?" and then abandoning all further efforts "to propagate useful knowledge" in this direction, he suddenly disappears as a spelling reformer.

The great astronomer, David Rittenhouse, Franklin's successor as President of this Society, was too much occupied with the heavenly bodies to care much about what was going on upon the earth, but his successor, Thomas Jefferson, had a personal and practical interest in this matter. He had to write many messages to Congress. This led him to a more thorough study of the language through which these important communications were made to his fellow-citizens. I am not sure that Jefferson was, technically speaking, a spelling reformer. Having undertaken to reform the old Federal party, he probably found his hands full, and declined any more contracts in that line; but a sentence near the close of his celebrated essay upon the Anglo-Saxon language, written in 1798, is pleasant reading for the spelling Reformers now; says he, "to express the sounds of a language perfectly, every letter of its alphabet

should have but a single power, and those letters only should be used whose powers, successively pronounced, would produce the sounds required," and then he declares with an emphasis that would have rejoiced the honest heart of Franklin, that the English spelling is farther removed from this state than that of any other language with which he was acquainted. He also asks in the same connection and with a cheerful confidence in the answer that must be given by all sensible persons, "if the English word *cough* were spelt *cof*, would that change the word?" Permit me to add, that although our third President did not do much to advance the reform so dear to the heart of our first, he did a great service to the English language by introducing Anglo-Saxon studies into the curriculum of our Colleges and Universities. He made the mistake, pardonable in those days, of regarding the Anglo-Saxon as "merely an antiquated form of our present language," asserting that, if we "would remove the obstacles of uncouth spelling and unfamiliar characters, there would be little more difficulty in understanding an Anglo-Saxon writer than Burns' poems;" but he was eminently sagacious in insisting upon "the necessity of making the Anglo-Saxon a regular branch of Academic education," and was far in advance of his time in giving to this study such prominence in the great university he founded.

But, with your permission, Mr. President, I will add that there are other members of the American Philosophical Society who have become eminent as Philologists, though they have not been called upon by the Society to occupy the high official position once adorned by Franklin and Jefferson, and now by yourself. We need only look around these tables to see them. The learned Professor of Hebrew in Princeton

Theological Seminary, Dr. Green, who sits at my right, has no superior as an Oriental scholar in this or any other country; and near him I see my old College friend, Mr. Ingham, whose graduation speech was delivered in Latin—the honor then awarded by the Faculty to the first scholar of the class—and although he would not, I am sure, allow me to name him among the specialists in the study of languages, I know that by his philological studies at home and abroad during the intervals of a business life, he has proved himself worthy of the spurs he earned at Princeton College thirty years ago. I see also President Chase, whose scholarly editions of the Latin and Greek classics are in the hands of all our College Professors; and Mr. Phillips, the cultured scholar, whose good work, both as a Philologist and Antiquarian, is recognized abroad as well as in America; and Dr. Brinton, eminent as an authority in the aboriginal languages of our country, and whose learned contributions to our knowledge of the Indians have really done much to redeem the American people from the dishonor of having broken all the treaties we have ever made with them; and I see at the farther end of the room, the genial and still youthful face of that veteran Philologist, Dr. Haldeman, the mention of whose honored name brings me back to the spelling reform, for it was this eminent scholar who carried off, over a host of learned and distinguished competitors, the prize offered by Sir William Trevelyan in 1857, "for the best essay upon a reform in the spelling of English." As often as I turn to the pages of this Thesaurus of philological learning and remember that it was written in Dr. Haldeman's "pre-scientific babyhood," *quoad philologiam* I am reminded of Hercules, who while yet in his cradle displayed such marvelous strength in

freeing himself from the monster which held him in its huge coils. But that was probably a lying fable. What Dr. Haldeman did is a fixed fact; and this learned pioneer in the spelling reform claims, and with justice, to be the first English scholar who can honestly use the exultant line of Bryant, "I broke the *spell* that bound me." Certainly, he and his learned coadjutors—for I do not know of an eminent philologist who is not enlisted to some extent in this spelling reform—have brought the brightest hopes of Franklin and Jefferson to the point of realization. This I concede heartily—but also sorrowfully, for at my time of life it is horrible to think of learning to spell over again. There was a time, I confess, when my zeal to undergo this personal tribulation for the benefit of posterity which (it has been forcibly said) has never conferred any benefits upon us, was not strong enough to keep me from devoutly wishing that a kind Providence would confound the counsels of these conspirators against the established disorder, at least until I was out of the reach of their new spelling books. Even now, I cannot help expressing the benevolent wish—benevolent to myself and my contemporaries—that this every-way desirable and even necessary reform had come earlier. I wish that Franklin had finished up the matter, and that our patriotic forefathers under his wise and practical leadership had succeeded in driving the bad spelling out of the country with the discomfited British. It really seems as if those long years that tried men's souls, would have been just the very best opportunity to dispose of this vexed question. There was so much turmoil and confusion during the war, such pecuniary distress, such afflictive social and political antagonisms that the misery, inevitable to the generation that reforms the English spelling, would hardly have been noticed; and the

people of the Colonies would have emerged from this double and synchronous revolution a really free and independent nation upon a sound political and orthographical basis!

But I must not lose sight of the text you have given me, which in connection with the quotation from Seneca suggests more than the spelling reform. Those who are familiar with this epistle of Seneca to his friend Lucilius, cannot have failed to notice the reluctance with which he admits that the Philosophers have become Philologists. With him philology meant the love and pursuit of science and literature. A noble aim. But the aim of philosophy was higher; it was the love and pursuit of wisdom, sapientiæ amor et adfectatio, as he defines it in another epistle to the same friend, or as Cicero in his *De Officiis* had already defined it, sapentiæ studium. This wisdom—the sapientia of the Latins, and the σοφία of the Greeks—was to all these thoughtful men, what it was to the inspired writer, "the principal thing;" the mater omnium rerum bonarum, says Cicero; the ars vitæ, adds Seneca. To turn away from this high subject in any direction was a descent, and Seneca could not without sorrow record the fact that what was formerly philosophy had now become philology. But may not the modern Philologists claim to have reascended these heights, where the Philosophers are gathered to discuss their great questions? Philology has long ceased to be regarded, even in the popular mind, as merely a curious study of words by antiquarians who delight in archaic or obsolete forms, the "Diversions of Purley," in the search for impossible derivations, or a learned and laborious discussion of the changes of vowels and consonants in which, according to the gibe of Voltaire, the vowels count for nothing, and the consonants next to

nothing. Philology, from the modern point of view, is a thorough and comprehensive study not only of all languages and their literature, but of the science of language. This is to study man, for as a distinguished authority says; "there is no nook of man's mind or heart or will, no part of his nature or history, into which the student of language may not be called to look." The Philologist therefore equally with the Philosopher, may use the oft-quoted line of Terence, humani nihil a me alienum puto. We continue, indeed, to send our boys to the schoolmaster that he may teach them Latin and Greek, for the scoffing of this practical age has not made us undervalue this thoroughly tested and approved means of cultivating the youthful faculties, nor the opulent results, in maturer years, of a familiar acquaintance with the languages in which is contained the literature that has quickened the intellectual life of all cultured nations. But the study of languages in this age has more in view than mental discipline or the ability to translate easily and correctly the classic authors. Its aim is not merely to know the thoughts of men which have come to us in many languages—a great heritage—but to know also the laws of mind in which all language is grounded. Words are things. The Philologist studies his word as the Botanist his plant. He inquires not only to what uses it may be applied, but *by what laws it grows*. Words not only contain thought but they are—merely as words—the product of the laws of thought. To study these laws is to study mind; and does not philosophy reappear in philology, which thus comes to study with it those great questions which lie nearest to the lives of men? It would, perhaps, better suit another time and place to show how what I have said as to the study of those words which have grown up between

man and man, is also true in a most significant and solemn sense of the great WORD, which was in the beginning with God, and which conveyed to man the thoughts of God. For He was not merely a teacher. He was himself a revelation. We must not only know what He taught;—it is life eternal to "KNOW HIM."

In the retrospect, which our celebration to-night suggests to us all, we must as American citizens rejoice in the progress which the study of language, in whatever light we view it, has made in our own country during the past century. I venture to say that never in any other age or country has the great and noble end of this study been more intelligently apprehended or have its methods and appliances been more complete. To enumerate the really valuable text books and publications upon this subject that have appeared in America, even within the last quarter of the century, would be to recite a list as long as the catalogue of ships in the Iliad. The work done by the American Philological Association is in the advanced line of comparative philology. Our colleges vie with each other in the intelligent application of the latest results of philological investigation. The London *Athenæum*, an authority in such matters, says that the studies of a philological character carried on in one of our Pennsylvania colleges, "are not surpassed in thoroughness by those which we are accustomed to associate with German universities." And then the great scholars who have arisen among us to give lustre to the age! In this presence I need not name them; but I beg to give one illustration of the progress made in American scholarship. Mr. Jefferson, in the essay from which I have already quoted, alludes to the few printed works in the Anglo-Saxon then published, and confesses with patriotic grief, that

the scholars of America could do nothing to enlarge the supply. He then says, "the publication of the inedited manuscripts which exist in the libraries of Great Britain only, must depend on the learned of that nation." But let me say that it is an American scholar who, during the past year, has been requested by the Early English Text Society of London to edit, as one of the series of its publications, the famous Anglo-Saxon manuscript—Alfred's translation of Orosius—now in the library of Lord Tollemache! I need scarcely say that the name of this great American scholar is Francis A. March, whose Comparative Grammar of the Anglo-Saxon language is a text book in the universities of England and of the continent. The mention of his name leads me also to refer to the recent enlargement of the curriculum of languages in all our colleges by the introduction of the philological study of the English, not as belonging to the department of Rhetoric or of English Literature or of Belles Lettres, but to the department of Language equally with the Greek and Latin, for in this Dr. March has been a pioneer, and the chair which he occupies, uniting in one professorship the study of the English language and Comparative Philology, was the first of the kind established in this or in any other country.

Let me say further—for the presence of Dr. Gilman, the learned and accomplished President of the Johns Hopkins University, reminds us of the fact—our college graduates are no longer dependent upon the universities of Europe for advanced instruction in the study of languages. Of course, foreign travel and even residence abroad for a limited time are still valuable for the young graduate, and there are great scholars and teachers and magnificent libraries in Europe; but he is no longer actually compelled to go abroad for post-graduate instruction. All the great colleges and uni-

versities of our country now offer courses of special and advanced studies, in most respects equal and in some superior to those found in the oldest and the best universities of Europe; and it is not invidious to say that the post-graduate courses of study offered by our youngest sister of Baltimore lead all the rest.

But, Mr. President, I must not trespass further upon the time allotted to these speeches. Already I fear that some of the gentlemen at these tables have called to mind, and with grave forebodings, that the original meaning of Philology, was "love of talking;" and it is, perhaps, something more than a coincidence that Seneca in the sentence immediately following the quotation given upon the programme to-night, quotes the well known phrase of Virgil, *fugit irreparabile tempus*. These ominous words contain a hint of special significance to after-dinner speakers; and so I bring these remarks at once to a close.

6. *The Society's name,*

Dr. DANIEL G. BRINTON, Philadelphia.

"A thing which Adam had been posed to name."—*Pope.*

Dr. Brinton, in response, said:

MR. PRESIDENT AND GENTLEMEN:

In rising to respond to the toast which has been proposed, I feel I need not insist before such an assemblage as this on the paramount importance of *names*. Whatever philosophy people many theoretically advocate, they are essentially *nominalists* in daily life. They attach more value to the name than the thing. The writer of fiction thinks his work half done when he has discovered a taking title, a catchy

name for the infant of his fancy. A bad name has hanged many a good dog, and a good name has saved many a man who would have been the better for the hanging.

Such opinions are not irrational. The name alone has perennial life, it perpetuates existence when all else is gone, on it alone hangs the fame of heroes and the glory of the great. The name is the subject of thought and speech. With it begins the first glimmer of knowledge, as we are reminded by the sentiment attached to this toast. In the first essay of his new-made mind Adam named the beasts of the field, both small and great.

Names applied to institutions have another and peculiar significance. They reflect the purpose and object of such institutions, they hint the hopes that gave them birth, they figure forth the ideal which is to be the goal of effort. I invite you to study the name of our Society in this sense, to seek its original significance, and perchance thus to learn the purpose which our revered founder had in mind in bestowing it upon our association. For it is probably not unknown to any of you that it was Dr. Franklin himself who stood godfather to the infant fraternity, and one hundred and thirty-seven years ago suggested for it the name it still is known by, *The American Philosophical Society.* In his circular of May, 1743, this is the style and title he proposed.

Like all that he did, this name was the result of mature consideration, and the motives of his choice may be divined from his own words and the scheme he proposed.

He named it *American* because he expected its activity to be occupied mainly with the New World, it was organized, as he said, to "promote useful knowledge among the British Plantations of America." His luminous eye foresaw the vast additions to human knowledge which this then unex-

plored continent would furnish; he knew, what other men only guessed, the capacity for marvelous development that lay in those colonies scattered on the virgin marge of an unknown world; with a sublime faith that partook of prophetic inspiration, he set to work to build for a future which even the sanguine deemed visionary.

In the name he may also have conveyed a limitation as well as an extension; he may have hinted that the subjects of research with which this Society should occupy itself should be those in some way relating to its surroundings; that it were well to leave to others the pursuit of investigations into classical and mediæval matters and into localities of old world note.

This leads me to the character and purpose of the inquiries he designed to foster by this organization. They are signified in the word *Philosophical.*

A century and half ago this term had a wider meaning than is current now. Bacon's definition was still in vogue. That great thinker divided philosophy into three branches, divine philosophy, in which "the contemplations of man penetrate to God;" natural philosophy, which covered the whole field now embraced in natural science; and human philosophy, under which was included what we now know as psychology, social science, political economy and the like.

It seems to me that Franklin must have had this very definition of Bacon's, with its threefold divisions, in his mind when he composed his circular of May, 1743, in which he first projected and named this Society. With wording drawn from the early verses of the book of Genesis, he defines its mission to be "to let light into the nature of things, to increase the power of man over matter, and to multiply the conveniences or pleasures of life." Clearly this is but a

free and popular rendering of Bacon's scholastic language; and obviously therefore, Franklin wished this Society to meet, in the fullest sense, the requirements of the title *philosophical*. All that pertains to man and nature are the legitimate subjects of its inquiry, providing they can be applied to some useful end. Moreover, with that practical wisdom for which he was famous, his notion of utility was not limited to dry and hard applications. He recognized the pursuit of the pleasures of life as a becoming and worthy subject for philosophical research. He recommended it specifically to his associates, as a desirable object of learning.

If we pass from the Baconian to the more strictly technical meaning of Philosophical, we shall find other matter for our thought. The philosophical mind is one earnest in the love of knowledge. But that knowledge is of a peculiar kind. It is not the accumulation of detached facts; it is not mere erudition and extensive learning. It is that manner of knowing which Bacon in a famous aphorism calls "true knowing," knowing through principles and laws, knowing through *causes*. *Veré scire est per causas scire*. This it is which gives facts their real value, this it is which transforms the grains of knowledge into the pearls of wisdom. The highest effort of thought is to pass from the special fact to the general law, from the experiment to the principle, from the concrete to the abstract, and this is what is meant by a philosophical knowledge of things.

To achieve such a knowledge, to build it on a firm foundation, can only be done by uniting the results of many observers and comparing them in the light, one of the others. Hence it is essential that a Philosophical Society should embrace a wide variety of scholars, each of ability in his special pursuit. It should be a society free from the control

of specialism; it should cover the whole field of observation and not be dominated by one part of it, by one department of study or thought. Franklin framed the constitution of the association to fulfill this meaning of the word. The members were to be chosen from all the learned pursuits; they were to communicate to each other such results and conclusions as should be of benefit to all, not mere details of their special lines; and the results to be published were to be confined to abstracts and papers "of public advantage."

In pursuance of this plan, Franklin provided that the minimum number of active members should be seven, each of whom was to pursue a different branch of study. One of these was designated as a "General Natural Philosopher," and under this title it appears to me he had clearly in view the formation of a class of thinkers which has been earnestly advocated in this day by Comte and Herbert Spencer; that is, a class who shall unite together the results of the different specialists in science under broad philosophical schemata, and weave them into a system of knowledge co-extensive with observed facts, and subsumed under the widest possible generalizations.

In this way alone do the innumerable details of science become available to the public good, and manageable by the general intellect. At the date of the origin of this Society, the need of such an appointment must have been but slightly apparent; but now that the details of specialties are becoming day by day more technical, more abstruse, and more remote from even general scientific language, the need is urgent. The danger is constantly present that the pursuit of a narrow path of investigation, which, however, demands the most strenuous labor to follow out, will warp the thoughts from the broad views and common motives of human culture.

Finally, Dr. Franklin called the organization a *Society*. Nothing is more impressive in the biography of this great man than the profound appreciation he had of the benefit of uniting men together to accomplish a purpose, of the value of free combination, of voluntary co-operation in social and national life. This idea lies at the basis of all modern, as distinguished from ancient progress. In the classic periods we read of the master and his disciples, of the noble and his retainers, of closely united classes and callings, but of nothing which corresponds to a modern scientific or literary *Society*. Such an institution belongs to a period when the sacredness of the individual is recognized, when an equality of knowledge overweighs the difference of wealth or birth, when all are willing to take off their shoes as they enter the temple of Truth.

One of the earliest public results of Franklin's life was the gathering together of his "ingenious acquaintances" into the well known "Junto." The fundamental principles of the Junto were three:—to be free from prejudice on account of profession or religion; to desire the welfare of mankind in general; and "to love truth for truth's sake." Whether our Society was or was not an outgrowth of this Junto, undoubtedly it was the intention of the philanthropist who created both associations, to inspire both with the same grand and holy principles of toleration, good feeling and sincerity. All that tends to these ends would surely be consonant with the name we assemble under and the projects of our founder; and certainly an occasion like the present, which brings us together to recall the worthy labors of our predecessors, to extend to each other the social courtesies of life, and to express our aspirations for the continued advance of the Society in the grand career which was from its birth marked out for it, does in a significant manner meet the requirements of our name and the objects of our association.

7. *The need of an elevated and permanent civil service,*

A. Loudon Snowden, Esq., Superintendent U. S. Mint.

"Oh, reform it altogether."—*Hamlet.*

In response, Mr. Snowden said:

I am honored, Mr. President, by your call, and doubly so by the cordial manner in which it has been received by the gentlemen of the Society, and heartily wish it were in my power to repay your kind partiality by something worthy of your consideration.

It must be a pleasure to all the members of the Society to be present upon this interesting occasion, not alone to discuss the good things provided by the thoughtfulness of the Committee of Arrangements, but to partake of the intellectual feast which has been so bountifully provided.

You have been pleased sir, in presenting my name, to associate with it, the names of three of my predecessors in the management of the Mint of the United States in this City, who were also presidents of this ancient Society, which has embraced in its membership, and upon its rolls of honor, some of the most illustrious names in letters and science which the last century has produced.

The three distinguished gentlemen to whom you were good enough to refer, David Rittenhouse, Robert Patterson and Robert M. Patterson, were, in their day, citizens and public officers who conferred lasting benefits upon the public service, and who were, in all the relations of life, examples worthy of imitation.

David Rittenhouse, who succeeded Benjamin Franklin, and preceded Thomas Jefferson, as President of this Society, was wisely selected by Washington on the passage of the Act of 1792, authorizing the establishment of the Mint in

this City, on account of his eminent scientific knowledge and great mechanical skill. He superintended the erection of the Mint building on Seventh street, saw to its equipment in machinery, to the perfecting of its organization, and, in 1793, issued the first coinage of the Republic. Little did he dream in that day of small things, that in less than fifty years, the one cumbersome screw press then in use, and capable of executing all the coinage required, at the rate of about ten or fifteen pieces a minute, would give place to the steam toggle-joint press with a capacity of from eighty to one hundred pieces to the minute, and that in much less than one hundred years, over thirty of those grand coining presses, with largely increased capacity and power, would be kept thundering night and day to execute the coinage demanded by law and by the wants of the people.

Robert Patterson, the fifth President of this Society, was called to the management of the Mint by President Jefferson in 1805. He had been honorably connected with our Revolutionary struggle, and subsequently was a Professor in the University of Pennsylvania, conspicuous for his learning and thorough administrative ability.

Robert M. Patterson, elected the eighth President of this Society, was a son of Robert Patterson, to whom I have just referred, and succeeded Dr. Samuel Moore in the Mint.

He graduated at the University of Pennsylvania, and subsequently prosecuted his studies in Europe. On his return to Philadelphia, he was elected Professor in our University, was Vice-Provost, and filled, successively, the Chairs of Natural Philosophy, Chemistry and Mathematics. In 1828, he became a Professor in the University of Virginia, from which he was transferred to the Directorship of the Mint in 1835; in which position he remained, rendering most ac-

ceptable service, until 1851, when failing health induced him to retire from public life.

It were well, Mr. President, for the honor and profit of our country, if high public station were always as well filled, and sacred public trusts as faithfully administered as in the instances to which, by your courtesy, I have been permitted to refer.

This brief allusion to the services rendered by these distinguished public officers brings me very naturally to the consideration of the theme you have been pleased to assign me this evening, to wit:

THE NEED OF AN ELEVATED AND PERMANENT CIVIL SERVICE.

This is a practical and important question, touching very closely the highest and best interests of our Country, and entitled to the thoughtful attention of every American citizen.

Neither the proprieties of this occasion nor your patience would justify an elaborate or exhaustive discussion at my hands. What I shall, therefore, with your leave, submit, will be but a brief reference to the most obvious points that present themselves in a rapid glance at the subject.

In the minds of all thoughtful and patriotic men, there can be no doubt as to the great advantage resulting from the elevation of our civil service above the control and influence of mere partisan interference. The battle to be fought before the triumph of this important principle is assured, will be sharp and well contested at every point, although no one should despair of the result, in view of the general and increasing intelligence of the people, now being brought to bear upon the question.

Of late years, public attention has been much directed to the subject, but, as was to be expected, it has met the most

determined opposition from the representatives of all parties. Every weapon that sarcasm, ridicule, and falsehood could forge in the workshop of selfishness, has been hurled against its advocates. And yet it must be confessed that the greatest injury inflicted, has come from pretended friends, who, under that garb, have attempted to accomplish selfish ends, and thus have brought ridicule upon the cause.

Nevertheless, steady advance has been had within the past few years, and some lodgment made in the minds of the people.

That there is too much foolish, intemperate, and unjust denunciation of our present service there can be no doubt. If we were to believe one-half that is written and spoken on this subject, we must conclude that but few, if any, honest or honorable men are engaged in public affairs.

This tendency to carp and cavil at, and criticise all men engaged in the public service, is said to be a natural outgrowth of our free institutions, which makes every citizen a censor. But whether this be true or not, the fact is nevertheless patent, that from the very organization of our Government, there has been more or less of this sort of thing prevalent. Even Washington, the most illustrious of all our citizens, if not the most illustrious man of all the world, was not exempt; nay, on the contrary, in spite of his invaluable services to the country, his nobility of soul, and his transcendent patriotism, he was subjected to the most violent, bitter, and unreasonable abuse, and under it retired from public life.

It was fashionable then, as it is now, among certain grumblers and inconsiderate persons, to denounce our civil service on all occasions. They do not take the trouble to obtain reliable facts upon which an intelligent judgment

may be formed, as touching the general service, but are prone to take isolated instances of wrong-doing, and base their opinion of the whole service thereon.

That this is a most irrational and unjust process from which to arrive at a sound conclusion, there can be no doubt, and yet it is the usual mode.

These grumbling pessimists who find no good in their own country or times, are very often least fitted, either by cultivation of mind or purity of character, to form a sound judgment of their fellow men.

Dismissing this class as worthy of no farther attention, it must be admitted, that although our civil service fairly represents the average moral and intellectual status of our people, it can nevertheless be elevated and rendered more efficient by means which are simple in themselves, and not difficult of application.

When I say the means of accomplishing this desired end are simple and easy of application, I should say, they are so, provided the people have courage and patriotism enough, to demand of their political leaders, that our civil service must be *permanent—promotions coming through efficiency, and the tenure of office dependent upon good behavior.* It will not do to simply incorporate these ideas or principles into the political platforms of the parties, as catch votes, to be forgotten after elections are lost or won; but let our civil service be organized under the sanction of law, as are the military and naval services, and thus secure a permanent application of this important principle, no matter how often administrations change, or parties succeed to power. That the law should bind all parties in this respect—if the principle is good—must be quite apparent. An attempt on the part of any administration to establish such a wholesome

system without the binding force of law to sustain it, can only hope for partial and unsatisfactory results, no matter how earnest and honest may be the effort.

It is doubtful, indeed, if any administration is strong enough to enforce the reform against long established precedent, and the selfishness of partisan managers, unless fortified and strengthened by law.

The reasons are manifold why the policy, as a mere administrative measure, is likely to be a failure; First, if for no other reason, because it would be looked upon as an ephemeral effort or experiment, likely to disappear with the administration, if not break down before it terminated. Second, because as such, it would be constantly assaulted with a view to its abandonment; whereas, if under the sanction of the law, it would be accepted as a fixed fact and remain practically unassailed; and Third, because it would have no binding force upon succeeding Presidents, who could and probably would overthrow in a day the work of years.

President Hayes will ever be remembered for a noble effort in this direction, and although much good has been accomplished, yet, from the causes I have enumerated, and others, results expected and hoped for have not been fully realized.

General Jackson is credited with the declaration that, "to the victors belong the spoils," and whether he or William L. Marcy is responsible for the utterance, there can be no doubt that Jackson was the first President who broke down the old tenure of office, handed down to us from our English ancestors, and recognized by Washington and his compatriots, as of the highest value in the administration of public affairs.

It is well to remember, however, that whilst General Jackson struck a fatal blow at the civil service, and prostituted it to selfish partisan ends, the service itself was largely responsible for the blow that was given.

Although existing by English and American precedents, it was not restrained by law within its legitimate sphere.

The service at that time was largely composed of those who differed politically with Jackson, and as it was a period of bitter partisan strife, they did all in their power to hamper and embarrass his administration. This was neither wise nor prudent, and exhibits to us the fact that, with the exception of the tenure of office, the service was badly organized and conducted. Instead of performing quietly and efficiently its legitimate functions, without regard to the change in the political head of the government, it was violently partisan, and used its entrenched position to defeat the measures advanced by the President.

There was, therefore, some excuse for Jackson's course. He was a positive, brave, although sometimes an indiscreet, man, and accustomed, from his habits of thought and training, to strike an enemy whenever and wherever he could find him. He struck his Whig adversaries, fortified in the civil service, and paralyzed them, as a power against himself. But in doing so he inflicted an evil upon his country which has widened and deepened as the years have followed. Had Gen. Jackson succeeded in applying a remedy for the evil justly complained of, by such legislation as would prevent a civil officer—as the unwritten law prevents officers in the army and navy—from participating in partisan strife, he would have accomplished the immediate purpose in view, and left to the future, this, as the brightest page in his remarkable career.

The primary and paramount object of all service is, to promote that which is best for the people at large, without distinction of party; whereas, under a corrupted system, it is customary to consider all the offices of the country as the common property of the party in power, to be distributed to their partisans as rewards for services rendered, or as implements to be used for future party purposes. No one will deny that this is the fact, and yet it is an utter perversion of the true and legitimate objects for which the offices were created.

The number of officers or places under the government is quite insignificant in comparison with the population of the country, and it is of very little moment to the great bulk of the people whether John Smith, Jones, or Robinson hold office or place; but it is of the highest importance that whosoever does hold the same, be skilled, intelligent, polite and trustworthy.

How are these essential qualities to be obtained? Is it by rotating a man in or out of office for a political purpose, or in having his continuance in place dependent upon his ability to carry a precinct or a ward convention in partisan contests, or, on the contrary, are not the offices more likely to be well and acceptably filled by having those holding them understand that so long as they are honest, attentive and faithful in the discharge of their duties, they will be retained and promoted for meritorious conduct when an opportunity presents? The continuance of a faithful and intelligent officer increases his opportunities for usefulness to the public. One of the evils, and not a small one, attending our present defective system is, that we are, by our short tenure, constantly put to the inconvenience and expense of educating new men.

A change in the national administration of the Government, especially where one political party is succeeded by another, must of necessity be followed by a change in such leading and important public positions as reflect the purposes and policy of the party in power, but in the name of all that is reasonable and proper why should a change in the administration necessitate a perfect upheaval in all our civil service, from the humblest laborer to the most skilled expert, mechanic or accountant? Because a new President is elected, is no reason why a skilled workman in the Mint, an intelligent, well trained letter carrier, or any other faithful employé of the Government should be removed. They have been educated for the service at the public expense, their education and equipment is the common property of the people, and should not be thrown away to gratify partisan selfishness.

What man of business, banker, manufacturer or merchant would think of adopting such a short-sighted or pernicious system in his own business? I know of no such man.

And why should we not apply in public affairs the same common sense principles and rules that govern in the ordinary pursuits of life? It seems to be so reasonable and proper a course that I cannot conceive of a good argument against its adoption. Because the people, as is their right, see fit to change the administration of national affairs on account of important public questions, such as the tariff, finance, state right encroachments, or centralization, or any other issue that may arise, is no reason why all the faithful and skilled employés of the Government, from the lowest up, should be turned out to give place to inexperienced successors, whose education and equipment for the service is attended with discomfort, errors, and loss to the people.

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Without going deeper into the subject, in all its bearings, or trespassing farther upon your kind indulgence, I think it must be admitted that a civil service based upon so illogical and uncertain a tenure, is defective in the extreme, and should be replaced by one resting upon common sense, as manifested in the usual business affairs of life. The opposition to a change from the present to a better system, comes principally from those leaders of both parties who claim that patronage is an important partisan weapon. But I am clearly of the opinion that an honest and fair test of the new system would satisfy even these persons, that they had over-estimated patronage as a factor in partisan contests. I think our political leaders would discern, like many an intelligent man of the South has, by the great lesson of the war, that, whereas he formerly leaned upon slave labor—felt he could not exist without it—yet, when schooled in adversity to self-trust and self-support, would not now return to the same order of things, or repossess his slaves if freely proffered him. Patronage is not always a power—and is oftimes a weakness—and I am convinced with some knowledge and experience, that its influence is much overrated.

Some of the grandest and most memorable contests ever fought upon the political battle-fields of our country have been fought and won without patronage, and indeed against the whole patronage of an administration improperly used.

The proposed change in our civil service would not only elevate and increase its efficiency, but would eliminate much that is venal, selfish and dangerous to the politics of the country. This branch of the subject is too wide and far-reaching in its results for more than a passing allusion to this evening.

Knowing the defects in our present service, and the evils

flowing therefrom, what is the remedy, and how shall it be applied? The remedy I would suggest is, *to remove by law the civil service of the country from under the control of partisan interference, and prevent its subordinates from an active participation therein.* By this course you will elevate the service, increase its efficiency, and largely decrease its expense to the people.

Is the remedy an impossible or even a difficult one to apply? To a nation which has laid forests, built splendid cities, peopled a continent, overcome a mighty rebellion, and emancipated four millions of human beings within the stride of a single century—it would seem as if this might be accomplished.

I know full well that it can be done, and that quickly if good men of all parties will only unite and determine that it shall be.

If the pernicious influences exerted by our present defective system are eliminated from our politics, we will have removed one of the greatest hindrances to our advance, and danger to our future peace, tranquility and prosperity as a nation.

8. *The tendencies of scientific culture,*

Dr. JOHN L. LECONTE, Philadelphia.

"Reasoning at every step he takes,
Man yet mistakes his way;
While meaner things, whom instinct leads,
Are rarely known to stray."

Dr. LeConte, in reply, said:

You have already been told that one hundred years ago the Commonwealth granted to a body of well-educated

citizens an act of incorporation constituting them "the American Philosophical Society," and to this name was added, "held at Philadelphia, for promoting useful knowledge."

It seems appropriate on this occasion, when we are met to do reverent homage to the memory of those founders of the Society, to enquire what were their objects, and what was then, and is now, considered "useful knowledge."

Before doing this, let us review, briefly as the time permits, the names and objects of some similar societies in older countries. Two examples will suffice:

In the first years of the seventeenth century there was founded at Rome the "Accademia dei Lincei," or the Academy of the Sharp-seers, for the general promotion of higher intellectual culture; this has since developed into a full Academy, under governmental protection, consisting of co-ordinate branches for different departments of learning.

Three score and ten years later was organized in Germany the Leopold-Caroline "Academia Naturæ Curiosorum;" persons curious about Nature. Its objects related chiefly to medical art, and are declared to be the study of Anatomy, Botany, Pathology, Surgery, Therapeutics and Chemistry. The transactions were published as "Miscellanea curiosa."

These names are now far from expressing the aims of scientific thought; yet in them may be discerned the lineaments of the embryo of modern science, whose sudden appearance and influence parallel the ancient myth of the birth of Minerva. These names accentuate the difference, not between the old and the new philosophy, but between mediæval scholasticism and modern observation. The former, constructed from the depths of its own consciousness, gave answers to all physical and spiritual enigmas,

based upon human motives and passions and sensations; the latter endeavors to ascertain the government of the Universe, and the means of conforming most perfectly to its laws, by close scrutiny of what is within our scope of comprehension. In other words, the latter replaces by observation and classification the *a priori* guesses of the former.

As the domain of knowledge became extended, a division of branches of science took place, each of which has contributed, though in unequal degree, at different times, to the rapid advance of modern civilization; and thus all are entitled to be comprised in the limits of useful knowledge. Though I am free to say that some which have yielded and will in future yield the most valuable results, are still regarded by the mass of the community, if not with ridicule, at least with a charitable contempt for the men who waste their lives in such trifling pursuits. Even as late as 1786, when the Magellanic Fund of this Society was established, there existed a prejudice against "mere Natural History," which led to its express exclusion by the donor from the benefits of his gift.

All this is now changed. The truth of the ancient text, showing the shortsightedness of the ordinary man, has again been vindicated: "The stone which the builders refused is become the headstone of the corner." The much despised Natural History of the past generations has become the Biology of the present, and rightfully reigns, by more than human authority, seated in the long usurped throne of the "Queen of the sciences."

Let us now examine the various ways in which the sciences have manifested their usefulness.

You will all agree with me that first in importance must be placed the higher personal education, which characterizes

the best modern instruction; the substitution of common sense and individual judgment upon matters of fact, for unintelligible jargon or incomprehensible dogma. For, as is well observed by Prof. Huxley, "science is common sense at its best, that is: rigidly accurate in observation and merciless to fallacy in logic."

To this end, that is, to the perfection of observation, the highest inventive power has co-operated with the most acutely directed reason, in devising instruments of precision by which magnitudes and movements, inappreciable by the unaided senses, are accurately observed, and even demonstrated to large bodies of spectators.

Ingenuity of a higher kind than that employed in commercial workshops, and labor more severe than any known to the artisan or mechanic, have been given to the construction of philosophical apparatus, and to the collection of materials for investigation. The community has often profited by the economic advantages indirectly derived from such untiring exertions, which were inspired by higher objects. The reward striven for has been, indeed, rather spiritual and moral than physical and sensuous. The love of knowledge and truth for their own sake is the stimulus; and, as is natural in communities growing in intelligence, greater influence in the realm of thought is the result. For be it observed, that the largest contributors to the thought of the present day are biologists and physicists; and their opponents are chiefly among those wedded to prejudice of ancient usage, or addicted to pursuit of their own temporal advantage.

These classes, we have reason to believe, are gradually diminishing in number, and will more rapidly lessen, as the genial influence of the still youthful science of observation infuses itself into our daily life and conduct.

It may be observed, in this connection, that while mathematics, physics and chemistry have contributed, both by their apparatus and processes, to this result, Biology, aided by these appliances, has given the finest and highest developments of modern thought. From the formerly despised collectors of curiosities, weeds and bugs and bones, have been evolved the classifiers and morphologists, who are displaying to your view the magnificent procession of animated beings through measureless periods of time, and demonstrating to you the much misunderstood correlation of the different organs of the body. In their hands are truly the keys of prolonged human life, increased power and enlarged usefulness.

During the new reconstruction of thought, based upon observation, many *antiquated* notions, by a perversion of language called *venerable*, have been rudely assailed. Metaphysical terms eluding definition or relating to subjects not capable of thought, have been replaced by words of clear meaning. The mists of superstition are being dispersed. The necromancer (*vulgo* spiritualist) instead of being turned over to legal or ecclesiastical tribunals for torture, is viewed either as a juggler practicing his trade for fraudulent purposes, or as a fatuous hysterical individual sadly needing the care of his family physician. Persecution is obsolete; with liberty of thought has begun a tolerance of opinion and a charity towards action, unknown in previous ages, from which may be expected the happiest results in the future.

While such has been the influence of science upon religious teaching and moral instruction, there is one matter which it is my duty to mention with regret, though this is not the place nor the time to exploit it fully. It is the

status of scientific men in courts of justice. As students above all others single-minded in the pursuit of truth, as trained observers, as careful and conscientious instructors, they are entitled to be invited into court as the advisers and enlighteners of the judge in regard to facts which he has neither the time nor the opportunity to ascertain for himself, and not to be summoned as the witnesses of the advocate. I say it with sorrow, but I think I can say it with truth, that upon no class of minds has the progress of contemporaneous science had so little influence as upon the legal; and no kind of business has been so slightly modified by its influence as legal procedures.

The other influences of science upon society are perhaps more generally appreciated, though hardly with strict adherence to the great law of sequence, or cause and effect, which dominates everything within human cognizance. A mere mention of them must suffice, lest I trespass unduly on the courtesy to which I owe the present opportunity of addressing you.

Next in order to the spiritual advancement which I have mentioned, are the habits of discipline and self-control which are essential to any serious study of science. As an educator, scientific training must be rated as coördinate with mechanical skill. For, whereas, a person trained as an artisan has always the power of earning a living, one versed in accurate observation and reflection has greater power of resisting the disturbing influences of evil than he would otherwise possess.

Thirdly, and lastly, by the labors of the investigator, the inventor is enabled to devise and perfect his application of science to the ordinary wants of the community; a thing which the man of science has rarely any opportunity of

doing. For, it is quite evident, that the rivalry for priority, the embarrassments of legal proceedings, and the expenditure of time, and the distraction of thought necessary to make any invention, however meritorious, a commercial success, are absolutely fatal to the accuracy and serenity which are essential to investigation. But the suggestions by the student of future applications of scientific principles, are not seldom the gems of thought, in which are latent the immense fortunes and interests created by the inventor.

It may be truly said of the philosopher, that as soon as the pecuniary or personal value of his science becomes prominent in his mind, his spiritual force is weakened. He is properly a coadjutor, and not a rival, to all who are engaged in the good work. It is his duty to assist, not to supplant. To strive for the best that is attainable, with gratitude but without desire for approbation, and also without fear of censure, must be the life-law of the man of science, as it must also be for the artist and for the religious teacher.

If time permitted, I would be glad to mention to you what I conceive to be the proper functions of scientific Societies, and the claims they have upon popular sympathy and assistance. They are in a strict sense neither oral teachers nor custodians; but to use the phraseology of Smithson, so happily interpreted and applied by our venerable (in its true sense) associate, Prof. Henry, "institutions for the increase and diffusion of knowledge among men."

I could show, by many examples, how, by departing from this simple path of duty, the resources of Societies have been crippled, and their usefulness paralyzed by indulging in the fascinating luxuries of large museums, and ornate architecture. The former should be under the protection of Governmental assistance, or in the care of largely endowed

institutions of learning. Voluntary contributions and unpaid labor can never support a museum which is rapidly growing; nor do such collections fulfill their functions except as appendages of Universities. They soon degenerate into imperfectly classified storehouses of curiosities, occasionally visited by students desiring to verify types which have been imperfectly described. Though an investigator can be assisted, I have rarely known one made by the influence of a large museum. The material is too vast for the use of a beginner.

The true life of scientific Societies resides in the zeal of the members, the completeness of the library, and the facilities afforded for publication. The objects for study lie everywhere around us and in us; and, as Prof. Agassiz told me, many years ago, the most familiar objects, and those most frequently scrutinized, will give the most important results.

If I have correctly exposed to you some of the influences which science can exert upon daily life, it is just to infer that upon the results of the labors of investigators (the accurate observers, and the correct interpreters of the phenomena of the Kosmos), future generations will rely for:

1st. The emancipation of religious teaching from the shackles of traditional superstition; the promulgation of reasonable dogma, and firmer adherence to correctly defined morals.

2d. The reform of the practice of the law in stricter accordance with the principles of substantial justice.

3d. The rational directions of primary education, so as to cultivate the observation and the judgment of the pupils.

4th. The increase of comfort, the suppression of disease, and the prolongation of life, by the natural outflow of commercial applications of scientific truths now, or in future, within the reach of man.

5th. The reformation of many departments of general and local governments, by the appointment to offices, requiring scientific knowledge, of men qualified to perform the duties; and in truth, by a cheerful recognition of the fact, that men of science are not inferior to ordinary men, either in capacity or integrity in the transaction of business. It has become too much the habit of unthinking persons to confuse the earnest student of progressive science, the man of practical thought, who often makes a life-long sacrifice of "such things as men possess,"* with the inventor; who with eye to prospective profit is sometimes led into visionary schemes, based upon imperfect information, or into attempts to prematurely introduce contrivances, well devised perhaps in principle, but not needed for the present desires of the community.

And it is my firm conviction, under the Providence, which presides over, and directs the system of Evolution, that none of these reliances of humanity will be vain.

9. *Daily and Periodical Literature,*

Mr. W. V. McKean, Philadelphia.

"To aim at learning without books, is with Danáides to draw water in a sieve."
—*R. Williams* (1639).

Mr. McKean, after a few playful observations expressing his astonishment at finding himself set down for a speech in the pretty little book containing the menu and the programme, when he had decidedly asked to be excused from speaking upon the valid ground that he, being among the youngest of the American Philosophers present, preferred to

* Müller, Sacred Books of the East, I, 78.

listen to the Sages of the Society, and, after referring to the subject assigned him as being far too large for the ten-minute rule sagaciously adopted by the Committee, continued as follows:

Mr. President and Gentlemen:—With your permission, I will change the subject. When I found that I was actually booked to speak, I gave very close attention to what was being said, in the expectation that some one of the speakers, by a chance word, would furnish me with a theme. President Gilman supplied the topic in his mention of the name of Benjamin Thompson, more widely known as Count Rumford, the American founder of the Royal Institution of England. A great deal has come to the world from that institution, though Count Rumford had not much money of his own to conduct it with, and did not succeed in obtaining much from others, but it is worth while to consider what the world has gained by the simple endowment of a chair for original research in that institution as compared with the outcome from institutions with princely endowments in this and other countries, where the money has been largely expended in stately architectural structures.

Let me illustrate. It happened once to me to make a visit to a neighboring city (I won't say what city) with a very dear friend of mine, who had endowed a university. Not far from our hotel on that occasion, was an institution that had also been endowed very largely by an eminent American. If I mistake not the amount of money that was put into the building and its equipment was about half a million of dollars. I went into it with the son of the gentleman whom I speak of, and found there a library, rather choice, but not very large. But in looking around its shelves I saw but few books that were not upon the shelves of other

libraries in the same city. There were five persons in the library at the time looking at the books. We passed out of that and went into the basement, and there we found an orchestra playing some very fine scientific music, and in front was an audience hardly more numerous than the orchestra itself. There were perhaps forty persons there, mainly ladies, and from their appearance belonging to wealthy families living in the neighborhood of that building, every one of whom could have paid for that sort of luxury. There was the result of an endowment of half a million of dollars! A stately and expensive building—a library that was not better than other libraries in that town, and an orchestra playing scientific music to people every one of whom could pay for it themselves and for their families! Certainly that was a very meagre result for that much money.

Well, gentlemen, similar results may be seen in other parts of this country. There are a great many magnificent structures put up from these grand endowments. The first thing the trustees appear to have in their minds is to employ an architect to put up a monumental structure which drains the fund nearly to the bottom, and after that comes what? Poverty. Poverty in the administration, *nil* as to the results in the way of promoting and diffusing useful knowledge among men. I won't go over them, you know where these buildings are and what the results are.

Let me now return to President Gilman's mention of Benjamin Thompson (Count Rumford), a Massachusetts man, who left this country about the beginning of the Revolution because his neighbors disputed his loyalty. He was a man of the Franklin type—an inquiring man, an investigating man. Nothing passed before him that he did not want to know

something more about it. Even a wheelbarrow was not beneath his notice. He would intivestigate a lamp, or a stove, or a kitchen, or a smoky chimney, or the phenomena of heat, or light, just as Franklin did. Through his efforts, with some of his money and what he could induce a few others to contribute, the Royal Institution of London was founded, and he left at his death some money for medals as prizes for original research. I hardly agree with President Gilman that the best result of Benjamin Thompson's gifts and legacies came out of the Harvard medal and other prizes. In my judgment the best results that came out of Rumford's work was the Royal Institution. It was not provided with a grand architectural home at the expense of the foundation fund. I do not know what kind of housing it has now, but for a long period of its career it had a very plain habitation, and yet from that small amount of money given, or procured to be given, by Count Rumford to that institution, we have Sir William Young, Sir Humphrey Davy, Michael Faraday and John Tyndall, and all the progress in useful knowledge they have given to the world. No money was wasted there upon a structure. He simply, with the aid that came to him and to his idea, provided and endowed a chair in which a man of philosophic mind, a man with a turn for scientific investigation could give his whole time to original research, the sort of investigation that has moved the world along. It was not required that the man who occupied that chair should be occupied all night long as a teacher, in getting up his lectures for his class; it was not required that the occupant of that chair should be subjected to the drudgery of life—to earn money by which his family was to be supported. But there was an endowment, a small endowment, which gave to its occupant a sufficient

sum of money to carry him along, and he was not required to do a thing except to carry on investigations in the line of original research; and the outcome to the world are the four magnificent characters named a little while ago, with their grand results in chemistry, electricity, physics, and natural sciences generally.

That is an example for us in these days in this country. There has been in this room to-night a man who ought to have been the Pasteur of the United States if he had been provided for, as those men were in the Royal Institution, and it would have taken but little money to do it. There has been a man here to-night if he had been taken care of in the same way, and if he did not have to go through the daily drudgery to earn money to take care of his household, would have been, and has the ability to be the Faraday of the United States. We do not provide as many of that kind of men for the world as we ought to do in this country. I am not unmindful that we have students in this country who are very distinguished; I am not unmindful of the Le Contes, Leidys, Copes, Marshes, Newcombs, Drapers, Mitchells, Rutherfords, and others, but we do not give to the world as many as we ought, and we do not do justice to the men whose names ought to stand in emulation with those of men in other countries like Huxley, Pasteur, Helmholtz and Tyndall in this day in England and on the continent of Europe. It would not take much money to do all this, very little money indeed. The example set by Benjamin Count Rumford is an example to be commended and remembered, that ought to be made known far and wide as far as the influence of the members of the American Philosophical Society can reach. Endowed chairs for original research in which to place our able men, are the equipment for our day—chairs

so endowed that the occupants shall be relieved from the drudgery of teaching and the necessity for this day's work to pay for the next day's living. We have able men who need no more than this to place them as peers in the promotion of useful knowledge with the best in the world. This plan, gentlemen, is, in my estimation, worth more to the country and the world than all the monumental buildings for university and college purposes in all our land, and it costs but a tithe of the money. President Gilman can get as good and beneficial work out of the old warehouses—the old buildings and back kitchens—in which the Johns Hopkins University is now housed, as he could if it were housed in the Capitol at Washington. The one building and equipment to which I have already referred cost as much as it would to endow ten chairs, and its outcome is not, or not long ago was not, equal to a tenth part of what came from the chair Michael Faraday occupied.

I thank you, gentlemen, for your attention.

10. *The Spirit of a Philosophical Society,*

Prof. J. P. Lesley, Philadelphia.

"Science moves, but slowly slowly, creeping on."—*Tennyson.*

Professor Lesley, in response, said:

The serious and the gay things of our existence are so blended in our experience as individuals, that a very slight apology will be demanded of me, if, on this joyous occasion, I venture to suggest a few grave topics of reflection.

We meet as members of a Society which boasts of venerable antiquity—after an American fashion—or rather on an American scale; a boast which would certainly be ridicu-

lous were it made in the city of the Pharaohs, or the city of the Cæsars, or at Aix la Chapelle, or almost anywhere except in the city of William Penn.

Let us suppose, however, that we were (as a Society, I mean) one thousand years old instead of one hundred. What real difference would it make? We should be invested perhaps with more vanity, but with not a whit more faculty: nor be a whit less responsible to our own exertions for practically translating pride into power.

I take it that perhaps the crowning beauty of human history lies in the essential identity of mankind of all ages. So far as thought is concerned there is nothing *new* and nothing *old*. The ancients proposed the same problems to themselves that we do; wondered at Nature as heartily and helplessly as we do; questioned the gods in precisely the same spirit (though by means of different apparatus) in which we question the forces; found the same excitement in the struggle for existence, and the same repose in old age. Temperance, justice and family love were then as now the acknowledged palladia of society; while the older sages stood upon the same platform of philosophical indifference to circumstances, and confidence in the resources of a free will for all purposes of offence and defence against evil, from which the philosophical minds of our nineteenth century now preach tolerance for opposition and trust in the order of events.

Neither is the difference greater between climes and races than it is between generations and ages. There have been Turanian as well as Aryan philosophers; and their scriptures are so like in spirit that they might have been written in the same alphabet.

On the other hand: while God has made thus of one blood all the dwellers upon earth, the diversities of individual

character baffle our comprehension. In one and the same family the physiologist and psychologist may find—not merely representatives—but exaggerations of the different human races: in feature, tendency of affections, modes of thought, and lines of practical pursuit.

A philosophical society like ours, dating far back—representing in fact the traditions of the middle ages, and the ages beyond them—composed at first of emigrants or the sons of emigrants from every nation in Christendom beyond the seas—established on no narrow or special basis, but consecrated to the diffusion of useful knowledge as a whole and in all its forms—absorbing into itself all coming tendencies, informations, systematic developments of the ideal and of the practical, like a fertile farm sown every new year with fresh seed and every year yielding a new, fresh harvest—surely such a Society is one of those fair phenomena of Nature over which the poet may sing his most exalted strain, while the philosopher invents for it his freest and finest hopes.

We celebrate, then, the birthday of a living being, to which a hundred years is but as one year, and which in one year may live an hundred.

We celebrate the creation of one of those immortal things of this world which have beginning, but which need not have an end. Political dynasties, like families, expire; but scientific societies should be ignorant of the possibility of death. Like ecclesiastical organizations, they recruit their wasting tissues by a perpetual renovitiation; but, unlike ecclesiastical organizations, they run no risk of becoming fixed and hard; their tenets can never become effete, for the basis of their life is the old ever being made over new—truth out of truth, a thousand times reverified, improved,

self-illustrated and self-luminous. Growing with the growth of the world, and of man, and of knowledge, the freshest blood of each successive generation courses through their veins. For them the past is rectified in the alembic of the present. Like the mountains they grow gray without growing old. Like the immortal gods, they are not subject to the decay of memory; nor can their wealth become the prey of robbers.

We celebrate to-night the proofs of the immortal youth of our Society.

Nevertheless, the despotic law to which all living beings are subjected is the same for them all: they must eat; and their food must be wholesome.

This is the topic of reflection which I wish most to intrude into the menu of this festival.

Who is to feed our Society? or, rather, with what food is it bound, by the laws of life, to feed itself? For, all nature shows us that only invalids are fed by other hands than their own. Let us feed ourselves. I appeal to every member of the Society to judge between him and it, whether he has felt this necessity. I ask you to consider—to frame in a picture—what our stated meetings would be like were we to come to them as people come to a picnic party, each one with a hamper of savoury viands to swell the common feast. I see around this table lawyers, doctors, clergymen, naturalists, mathematicians, poets, artists, merchants, mechanicians, politicians and philanthropists (which are, of course, one and the same)—every one of whom has been taught fine things of (and by) his self-elected art or profession. One hundred and fifty such members reside within walking or riding distance of the Hall. Only thirty meetings are held in the year. If, then, each member of the Society would—only once in

five years—skim the thickest of the cream from his milk pans, and make a bold (or a shy) present of it to the Society, it is quite evident that every year of its existence would be a twelve months' festival.

Gentlemen, the Hall of the Philosophical Society is no club-house. It is a rendezvous for thinkers. Its Society is a republic of men who have inherited knowledge—who have themselves manufactured and sold knowledge—who are more or less disciplined to tell what they know—whose function it is to diffuse true information—whose very nature it is to be hungry for truth, jealous for the truth, thankful for the truth, proud of the truth, believing and trusting in truth as the alpha and omega of the principles of things animate and inanimate, and apt in the use of all the truth they can get for the conduct of life.

Let me say a word of the spirit which should characterize a Philosophical Society like ours.

When I began to attend its meetings many years ago—I was an ardent young man then—the first thing that struck me was the coldness of the room. I do not mean to conceal the fact that there was a bright anthracite fire in the grate on winter nights. But when anything too earnest or a little enthusiastic was said, there was not only no applause, but commonly no response. Chilling silence like a fog fell upon orator and audience. Among the elders I could notice a great regard for forms and precedents. Certainly a younger man was always respectfully listened to, but somehow or other he seemed to have no heart to speak again.

The meetings, too, were often as short as they were formal, an adjournment was moved as soon as might be after the minutes, obituary notices and nominations had been attended to. Then a few old cronies would gather around the fireplace,

and the real meeting would apparently begin. There was little or nothing strictly *philosophical* to stay for; but racy anecdotes and sometimes very clever jokes would go round the semi-circle; and a good many of them made my young unhardened cheeks burn.

Is it possible, thought I, that men the report of whose wisdom and learning is in every mouth—for whom all the seed of past ages has been sown—to whose eyes the mysteries of the universe have been in part unveiled—for whom the awful future waits—can turn so noble an institution as this into a jest? Can these portraits on the wall fail to restrain levity and arouse enthusiasm? Is such air as this to be spoiled with the odor of earthiness? I understood it better after hearing the sad story of the Chinese Museum speculation, which had swept off like a flood all the savings of the Society and left its Library and Cabinet in the sheriff's hands. I cannot help wishing the whole of this story were written and published for the warning of the members in future years, a perpetual protest against all attempts or suggestions to alter the thrifty policy of the Society, and a cogent argument against the founding of a museum or the erection of a pretentious edifice.

But my allotted time is out. I have missed the track of my remarks. All that has passed away. Our meetings now are as full of life as they seem to have been in the days of Franklin, Rittenhouse, Hopkinson, Hutchinson, Samuel Vaughn, Ewing, Rush, and Timothy Matlack, a hundred years ago. And the life of our meetings is genial as well as dignified. Every wholesome and thoughtful utterance is openly welcomed. Perfect equality, cordial friendship and honest science seem to make our evenings what they should be. Yet I sometimes wonder whether the traditions

of five and twenty years ago do not yet linger about us and prevent our fellow-members from waking up to the knowledge and appreciation of the case as it now stands. Surely more of them would then attend the meetings, bringing their best thinkings with them. Is it an idle fancy that every one of our meetings *might* be made a good deal like this one?

The spirit of a Philosophical Society should, as it seems to me, have two elements of character. It should be generously catholic; and it should be both critical and exclusive in regard to both persons and papers.

These are, in fact, the two poles of human excellence, both in thought and feeling. The first bestows liberty; the second guarantees honor and security.

I cannot end without noticing a strange prohibition in the usage, if not in the laws, of our Society, which forbids the discussion of questions of religion and questions of politics. In past times this may have been an excellent safeguard against dissension and perhaps dissolution. But it seems an odd attitude for a Philosophical Society to maintain now-a-days.

Can there be a philosophy which does not concern itself with religion and politics? Yes: a philosophy resolute in shutting its eyes to all of the universe which does not consist of brute matter. Good then! let us resolve our Society into an association of physicists and naturalists.

For my part, as I believe in God as much as I believe in man, and in a commonwealth as much as in a geological formation, my idea of a Philosophical Society is, that its members should busy their brains about *all* truth, temporal and eternal, material and spiritual, formal and essential; interrogating the past, the present and the future; in a spirit

neither weakly catholic and generous, nor harshly critical and exclusive.

I beg leave therefore to offer this toast: May the spirit of the American Philosophical Society ever be reverent toward God, generous for opinions, critical of facts, and benevolent towards mankind.

At the conclusion of Prof. Lesley's address, Mr. Fraley arose and said:

The hour of adjournment has now arrived. I congratulate you upon the success of this celebration, and I hope that when those who are to come after us celebrate 1943 and 1980, they will have as good a dinner as we have had, and, excepting what I have said myself, as good speeches as those to which we have listened.

Adjourned.

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ERRATA.

Page 327, line 15 from bottom, for *meaning* read *meanings*.

Page 451, line 17 from top, for *currents* read *current*.